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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/661,766	09/14/2000	Colin Stephen Gormley	5780	1331

7590 12/03/2003  
Samuels Gauthier & Stevens LLP  
225 Franklin Street Suite 3300  
Boston, MA 02110

EXAMINER

VU, QUANG D

ART UNIT PAPER NUMBER

2811

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/661,766

Applicant(s)

GORMLEY ET AL.

Examiner

Quang D Vu

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28-39 is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-27 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1, in lines 6-9, the phrase "...prior to bonding the second etch stop layer to the one of the second and third layers, patterning the second etch stop layer to define the component in the second layer for facilitating etching of the second layer through the third layer..." fails to reflect the subject matter of the instant invention. The specification (figure 7) discloses the second etch stop layer (9) is thermally grown on the upper surface (26) of the intermediate layer (second layer [5]). Then, the second etch stop layer (9) is patterned to define the micro-mirrors 10 (page 12, lines 13-15) as shown in figure 8. After patterning the second etch stop layer (9), the top layer (third layer [6]) is bonded to the second etch stop layer (9) as shown in figure 9. The specification never disclose prior to bonding the second etch stop layer to the one of the second and third layers, patterning the second etch stop layer to define the component in the second layer for facilitating etching of the second layer through the third layer.

Art Unit: 2811

***Allowable Subject Matter***

3. Claims 28-39 are allowed.

4. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not teach or fairly suggest, either singularly or in combination, at least the limitation “etching a part of a portion of the first etch stop layer adjacent the portion of the second layer where the component is to be formed through the commuting bore for reducing the depth of the first etch stop layer adjacent the portion of the second layer where the component is to be formed to an effective stress relieving depth for relieving stress in the portion of the second layer where the component is to be formed”.

***Response to Arguments***

Applicant's arguments filed 09/08/03 have been fully considered but they are not persuasive.

It is argued, in page 5 of the remarks, that the specification shows “prior to bonding the second etch stop layer to the one of the second and third layers, patterning the second etch stop layer to define the component in the second layer for facilitating etching of the second layer through the third layer”. This argument is not persuasive because the specification (figure 7) discloses the second etch stop layer (9) is thermally grown on the upper surface (26) of the intermediate layer (second layer [5]). Then, the second etch stop layer (9) is patterned to define the micro-mirrors 10 (page 12, lines 13-15) as shown in figure 8. After patterning the second etch stop layer (9), the top layer (third layer [6]) is bonded to the second etch stop layer (9) as shown in figure 9. After bonding the top layer (third layer [6]) to the second etch stop layer (9),

Art Unit: 2811

the openings (36) are made by etching from the top layer (third layer [6]) through the second etch stop layer (9) and through the intermediate layer (second layer [5]) to the first etch stop layer (8) for forming the micro-mirrors component (10) as shown in figure 11.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang D Vu whose telephone number is 703-305-3826. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on 703-308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

qv  
November 26, 2003



EDDIE LEE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800